DIRECTIONS FOR SETTING UP AND OPERATING

The CYCLONE COIL

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THE CYCLONE CABINET COIL.

DON'T run the coil unless the discharge rods are in place so as to allow the current to discharge into the air.

DON'T expect the best results with the spark gap badly burned.

DON'T forget to oil the spark gap screw occasionally.

DON'T start the X-Ray tube with the spark gap open, or stop it before closing the gap.

DON'T run the coil on the direct current. It is intended for the alternating current only.

respiration, heart, and the vaso-motor system. The application here should be gentle, and continued until the skin shows a slight redness. The effects are most satisfactory.

Patients suffering from neurasthenia (resulting from overwork and worry), insomnia, etc., respond to a treatment as above described, better than any other kind of medical treatment.

For the ache of muscular rheumatism and neuritis, apply directly over the painful part, making the current sufficiently mild that it may be borne for a ten-minute application. This treatment may be repeated two or three times the same day, should the pain return.

Applied over the area of the liver, it stimulates its functions, increasing the flow of bile and the chemical change in the blood from the viscera of digestion. The high frequency current from the No. 14 electrode is a valuable adjunct in the treatment of skin diseases.

Of the special electrodes, the small eye electrode is useful in the treatment of migrame; No. 2 in toning up the vaginal glands and curing leucorrhœa; No. 11 in healing cervical erosions; No. 3 in treatment of piles and puritus ani; Nos. 5 and 7 in the treatment of urithritis.

No special couch, chair, or insulating platform is required. Any wooden chair, which does not have metal springs, may be used.

For books on high frequency treatment, see High Frequency Currents, by Chisholm Williams, price, $2.75; Currents of High Potential, of High and Other Frequencies, by William Benham Snow, price, $2.50; Elements of General Radiotherapy, by Leopold Freund, price, $5.00.

Directions for Setting Up and Operating the Cyclone Coil

Unpack carefully and see that no small parts are left in the packing material.

Assembling.

The coil is shipped assembled, and needs but unpacking and connecting to the lamp socket to be ready for use. A glance at the cut will give you a general idea of how the parts of the tube stand should be arranged. They are easily assembled by the aid of a screw-driver.

Connections.

With each coil is furnished a cord with a square connector on one end, and on the other an attaching plug, which should be screwed into the lamp socket. On the right-hand side of the cabinet will be seen three sets of pins marked, Weak, Medium, and Strong. The square connector may be slipped on any set of pins desired. On the opposite side are found two sets of holes marked, Thermo-Faradic and High Frequency, also two switch pins with hard rubber heads. These pins should be inserted in the proper pair of holes according to the current desired. In case of the thermo-faradic, the sponge or the lamp and sponge, should be attached to the binding posts directly above the holes. This arrangement differs on the Portable Coil. See Special Directions.

Special Directions for Operating the Cyclone Portable Coil.

Never lift the coil by the strap unless the top section is locked in position.

Observe that the top section is located by two rubber steady pins, one of which is much nearer the end than the other. This

is to prevent reversing and misconnection when the top section is inverted. When the top is rightly placed on the base, neither end will project. Be sure that the spring pins strike the contact plates. This they must do if the top section is properly located.

Be sure to examine the factory method of packing the small parts within the coil before disturbing their arrangement.

Place the hard rubber extension pieces in the hard rubber secondary posts by a slight twisting movement, then slip the discharge rods over the pins on the top of these extension pieces. Never run a coil unless the discharge rods are in place just as described, otherwise it will be damaged. To remove the extension pieces, lift and rock them. Do not try to twist them out, as that is likely to set them more firmly.

The arrangement of the tube stand can readily be ascertained from the illustration. This stand is necessarily small and should not be abused. It will be seen that a little pressure on the wing nuts will firmly hold the small parts. Too much pressure should not be used. If adjustment is desired, be sure to slack off the nuts first and do not try to force into position.

The pin switching device will be found inside of the base in the end opposite the spark gap. If both switch pins with the hard rubber heads are placed in the holes marked High Frequency, the secondaries will be excited, if they are in the proper position as before mentioned.

X-Ray.

First be sure that the main switch is off or the square connector disconnected from the pins and the spark gap closed. Place the tube in the stand and connect as per diagram. Slip the small adjusting handle with ball on end No. 20 over the wire No. 21, in such a position that it may easily be brought up to ball No. 15. Have the gap at A open from 2½ to 3 inches. Connect wires No. 21 and No. 22 to the rings in the pole pieces of coil Place the square connector over the proper pair of pins: Strong, if powerful effects are desired; Medium, if weaker. Turn the switch to ON. Then open the spark gap gradually until the desired effect is

are of a peculiar character and capable of producing blisters. They can be easily avoided by moving the sponges around, keeping always in contact with the flesh, and by closing the spark gap before removing them. If less current is used, the heat effect disappears, the current becomes markedly faradic in its character but possesses great smoothness on account of the enormous frequency and perfectly steady oscillations.

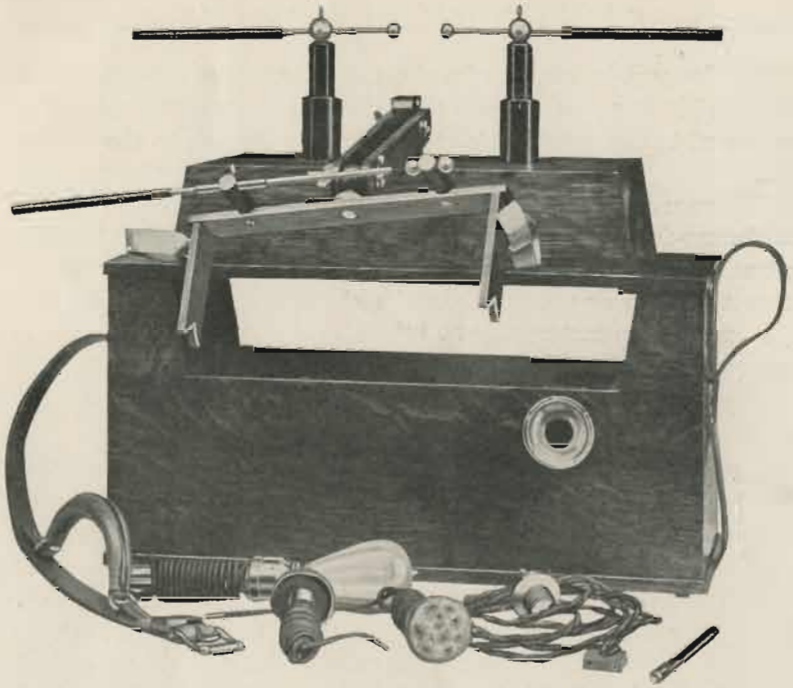
Vacuum Electrode Effects.

Attach one end of the insulated wire to the electrode, the other to one of the pole pieces. One pole only may be used, or the patient may be connected in circuit by holding in one hand a glass or metal electrode attached to the opposite pole, while the other electrode is applied by the operator. Start with the spark gap closed and the square connector on Weak or Medium. Increase current as desired by opening the spark gap. The operator applies the electrode with one hand, using the other to hold the wire aloof from the patient, by means of an insulated handle.

The electrodes may be applied directly in contact with the skin, which produces a sensation of mere warmth, or held at a little distance, when a spray or sparks are delivered according to strength of current. Electrode No. 14 may be applied equally well through the clothing. Hairpins, or articles of clothing containing metal, etc., must be removed for local application to the parts. The amount of insulation of the clothing varies so much that it must be determined for each individual case.

The discharge from the electrodes can be varied from a bare sensation of warmth to painful sparks. This may be accomplished by the adjustment of the spark gap, and if a mild application is desired, by inserting a No. 17 or No. 18 electrode in the middle of the wire to which the operator's electrode is attached.

No. 14 electrode, with moderate current applied in a general treatment over arms, legs, and body, produces a general tonic effect, bringing the blood to the surface, and by causing gentle muscular contractions enhances cell metabolism. A favorite application for tonic treatment is over the medulla, the great nerve centre of

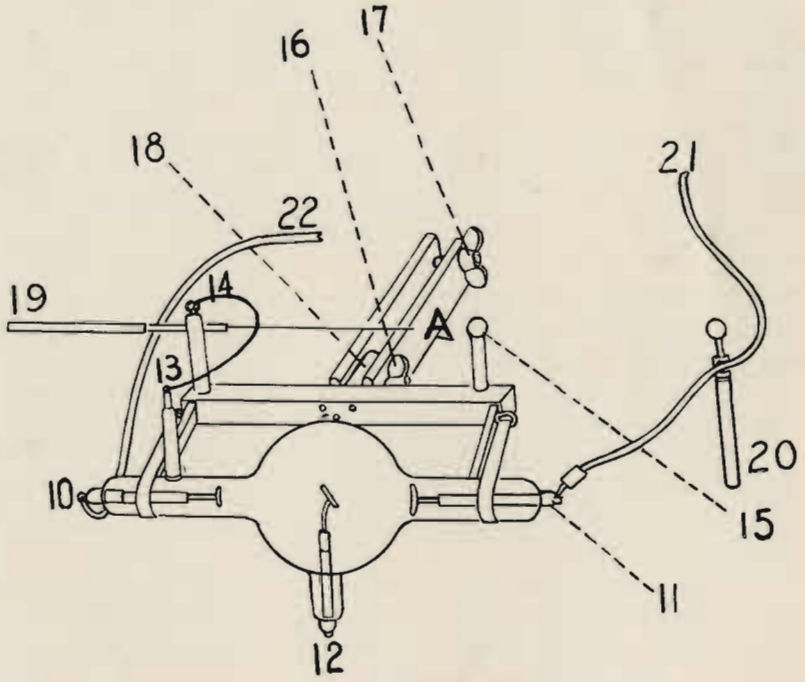


THE CYCLONE PORTABLE COIL — OPEN

THE CYCLONE PORTABLE COIL — CLOSED

obtained from the tube. In working either an X-Ray tube or vacuum electrode, the switch pins must always be in hole marked High Frequency.

Should the vacuum in the tube be too high, bring handle No. 20 up to ball No. 15, and allow it to remain in contact as long as sparks pass across at A. When they cease, the tube will be found low enough. Shortening the distance at A in connection with



handle No. 20 will lower the vacuum, lengthening it will raise the vacuum.

To obtain a maximum X-Ray effect, the spark gap should be opened gradually until just before it ceases to operate. If the sparking at the gap stops, turn it back until it begins again, then open once more as far as possible. Perfect control may be obtained by the spark gap and by moving the square connector to the dif-

ferent sets of regulating pins. Anything between the smallest and the largest amount of current may readily be obtained.

A space of about three inches will give a high vacuum, or hard tube; a space of one inch, a low vacuum, or soft tube, etc.

Never allow gap A to be closed while the coil is running, for if it is, too much gas will be driven off, bringing the vacuum too low for X-Ray purposes. Should an accident of this sort happen, put the tube away for a week or two, and after that time the gas will probably have been reabsorbed. The vacuum may be raised by running the tube until the anode becomes red, then resting it for a few minutes, then running again until the anode reddens. If this is repeated a few times and the tube allowed to rest for an hour or longer, it is usually high enough for all purposes.

A brief explanation will make the adjusting apparatus clear. Electricity always travels by the easiest course; it will, therefore, go through the tube if the vacuum is not too high, but if it is too high, it will travel by the course A. This sends sparks through the chemical bulb, No. 13, liberating gas. This continues till the vacuum is lowered to a point where the current resumes its passage through the tube.

The electrodes of the spark gap can easily be unscrewed by the fingers or plyers, and may be polished by rubbing on a piece of sand or emery paper. A little brightening once in a while will improve the running of the coil. An extra pair of electrodes is furnished with each coil and will be found sufficient for months of continuous work.

When running the tube or electrodes, the cords carrying the current must not touch the woodwork near the secondary posts. The cords should be at least one inch or more away from the woodwork. If they are loosely knotted this may be accomplished with ease.

Milliampere meter.

Place the milliampere-meter on some convenient support. If the instrument is set on the top of the coil, it should be placed on a thick piece of felt or a magazine so as to raise it from the woodwork. Connect by means of a short cord with one pole piece and with one binding post. From the other binding post on the meter run a cord to the vacuum electrodes, or wire No. 22, to the X-Ray tube.

When using the thermo-faradic, run the short cord to one of the thermo-faradic binding posts, and connect to the other binding post as usual. To the second meter post, attach the cord running to either the lamp or sponge. On the thermo-faradic, use only the high scale or the meter may be injured.

Thermo-Faradic Effects.

In starting, see that the switch pins are in holes marked Thermo-Faradic, that the spark gap is closed and that the square connector is on pins marked Weak or Medium, according to whether mild or strong currents are desired.

In starting, always open the spark gap slowly, and in stopping, always close before removing the electrode from the patient.

Thoroughly wet sponges, or other electrodes, should be attached to the thermo-faradic binding posts and applied as may be desired to the patient. Two currents of markedly different character may be obtained and changed at will by means of the spark gap or regulating pins. If the full current is used with an exceedingly small spark gap increasing from mere nothing until the current becomes painful to the patient, and properly graduated, no electrical sensation will be felt. A sensation of heat will be produced under and at a considerable distance from the sponges, one of which generally becomes hotter than the other. If too much spark gap and current are used this heat will soon become unbearable. If it is desired, the current may be sent to the patient by means of the incandescent lamp, and a sponge used for its return. By this means, the filament of the lamp is in series with the patient, and will glow to a greater or less extent according to the current received. It is not difficult to bear, for a short time, a current of sufficient strength to bring the lamp to full brilliancy. With the spark-gap open, the current will be strong, and some sparks will be noticed on applying or removing the sponges. These sparks